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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,116	03/01/2002	Troy Michael Herndon	8033102	4202

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EXAMINER

SNIEZEK, ANDREW L

ART UNIT PAPER NUMBER

2651

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,116

Applicant(s)

HERNDON ET AL.

Examiner

Andrew L. Snizek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 and 18 is/are allowed.
- 6) ☒ Claim(s) 8-10, 14 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 11-12 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The following action is taken in view of the amendment filed 6/25/04.

Drawings

2. The drawings were received on 6/25/04. These drawings are acceptable.
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the structure used to reduce the temperature of the FDB as set forth in claim 21 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 21 (previously claim 13 written in independent form) sets forth a "means for selectively increasing the stiffness of said bearing by reducing the temperature of the FDB motor". Although the specification states that the temperature of the motor can be reduced the structure that performs this function as set forth by the "means for" language as set forth is not disclosed. Without such a structure disclosed the specification is not described in such a way that enables one of ordinary skill in the art to make and/or use the invention. Is one skilled in the art supposed to guess the structure that might be used? Even if one skilled comes up with a structure that would reduce the temperature, there is no way to determine if that is the structure applicant intended or if this structure functions equally well in the disclosed arrangement.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 8-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleury et al.

Fleury et al. teaches an apparatus that increases the stiffness of a FDB motor (column 2, line 52 – column 3, line 10 along with column 9, line 51- column 10, line 5). Fleury et al. does not specifically teach to increase the stiffness during servo writing as set forth in claim 8. It is well known in the art to write servo information on disks and that during a servo write operation the disks are rotating relative to the transducer, therefore the bearings are in operation. Official notice is hereby given. Fleury et al. makes it clear in column 10 that the designer has control over the amount of desired stiffness during bearing operation. It would have been obvious to one of ordinary skill in the art at the time of the invention given the teaching of Fleury et al. to control the stiffness of the bearing at various bearing operations including a well known servo write operation since this would achieve a more accurate recording of servo information. The compressive load as set forth in claims 8 and 9 are satisfied by the operation of the piezoelectric member (804), which is used to provide a greater stiffness to the bearing. As shown in figure 10 there can be provided on each end of the shaft a piezoelectric arrangement that is used to provide a clamping force between surfaces 1006 and 1008

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therefor providing a clamping action and satisfying the limitations of claim 10. Claim 14 sets forth similar limitations as discussed with respect to claim 10.

8. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleury et al., in view of Liu et al.

The teaching of Fleury et al. is discussed above and incorporated herein. Claim 19 additionally sets forth that the bearing used is a conical bearing. Although not taught in Fleury et al., such bearings are well known in the spindle drive art as taught by Liu et al. (column 4, lines 59-63) for the same purpose of holding spindle arrangements in a disk environment. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the bearing as taught by Fleury et al. with a conical bearing as taught by Liu et al. since each are used in similar arrangements for similar purposes. Claim 20/14 set forth limitations similar to those discussed above and rejected for similar reasons.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 21 is rejected under 35 U.S.C. 102(b) as being anticipated by Takizawa (JP 6-150527).

Takizawa teaches (see PURPOSE and CONSTITUTION) a fluid bearing motor that includes a means for selectively increasing the stiffness of the bearing by using a heater

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and a heater driver circuit that only heats when activated and allows for a cooling (reduced temperature) of a fluid in the bearing. As set forth the limitations of claim 21 are satisfied by this arrangement.

Allowable Subject Matter

11. Claims 1-7 and 18 are allowed.

12. Claims 11-12, 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: The claimed method of reducing run out during a servo write as set forth in claim 1 that includes the combination of increasing the stiffness of the bearing during the servo write and then decreasing the stiffness of the bearing after the servo write is neither taught by nor an obvious variation of the art of record. Claims 2-7 and 18 depend directly or indirectly on claim 1. The claimed arrangement as set forth in claim 11/8 and 12/8 that uses an electromagnetic means as disclosed with respect to figure 4 to selectively increase the stiffness of the bearing during a servo write is neither taught by nor an obvious variation of the art of record. Claims 16-17 depend on claim 12. The claimed arrangement as set forth in claim 15/14 that includes a clamp that abuts the two ends of the shaft and also abuts the casing to provide the part of the apparatus that increases the bearing stiffness of a FDB during a servo write as set forth is neither taught by nor an obvious variation of the art of record.

Response to Arguments

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14. Applicant's arguments filed 6/25/04 have been fully considered but they are not persuasive. Applicant argues that the applied reference(s) do not teach applying a compressive load to the bearings. Contrary to applicants remarks, such feature is satisfied by the arrangement of Fleury et al. as pointed out in the rejection. In Fleury et al. an active force is applied in one direction due to the piezoelectric arrangement while a passive force is applied by a non-moving element. Possibly applicant is of the opinion that a "compressive force" is one that is actively applied in two directions toward each other. If so, the examiner does not agree with opinion, since no such definition of compressive can be found. Also, the claims do not specifically define what is meant by a compressive load to define the claimed arrangement over the applied art.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

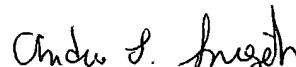
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Sniezek whose telephone number is 703-308-1602. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh N Tran can be reached on 703-305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Andrew L. Sniezek
Primary Examiner
Art Unit 2651

A.L.S.
9/9/04